



Australian Bureau of Statistics

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REBENCHMARKING OF LABOUR FORCE SERIES

INTRODUCTION

Labour force statistics measure aspects of the labour market, and are important economic and social indicators. For these reasons, ensuring the accuracy of the labour force estimates is vital. There are two key components of labour force estimates: i) the measure of the population potentially available to the labour force (i.e. the civilian population aged 15 years and over); and ii) the labour force status of people in the population (i.e. being employed, unemployed or not in the labour force).

Labour force estimates are compiled monthly from data collected in the monthly Labour Force Survey (LFS) and weighted up to measures of the population. As these population measures are required approximately nine months before official population estimates are available, the most recent population estimates are projected forward to provide a measure of the population for LFS purposes.

This article: (i) provides background to the rebenchmarking of the labour force estimates for the period July 2008 to October 2012; (ii) summarises the impact of revised population benchmarks on key labour force series for this period; (iii) describes the method for calculating the revised population benchmarks; and (iv) provides details of proposed labour force revisions into the future.

BACKGROUND TO REBENCHMARKING

Labour Force Survey (LFS) estimates of persons employed, unemployed and not in the labour force are calculated so as to add up to independent estimates of the civilian population aged 15 years and over (known as population benchmarks) for age groups, sex and regions. These population benchmarks are initially derived as short-term projections of the most recent preliminary population estimates.

LFS population benchmarks can be updated when preliminary population estimates become available to replace the short-term projections, and again when these preliminary estimates are subsequently revised. However, up to now, ABS policy has been to revise the benchmarks five-yearly following final rebasing of population estimates to the latest Census of Population and Housing data, and at other times when the need arises. From February 2009 labour force estimates have been compiled using population benchmarks based on the results of the 2006 Census. The most recent benchmark revision occurred in July 2010 with revisions made to labour force series for the period July 2006 to June 2010.

Recent analysis of LFS estimates for 2009 to 2012 has identified some divergence between the latest available population estimates and the LFS population benchmarks. These differences have impacted on estimates of employment growth over this period. As a result, the ABS has

rebenchmarked LFS estimates from July 2008 to October 2012 to use the latest available population estimates for the period. These revised LFS estimates have been released with this month's issue (November 2012) of **Labour Force, Australia** (cat. no. 6202.0).

These revisions do not involve any changes to the data collected in the labour force survey. Changes to the LFS population benchmarks impact primarily on the magnitude of the labour force estimates (i.e. employment and unemployment) that are directly related to the underlying size of the population. Changes in population composition such as age, sex or region (as used in the population benchmarks) may result in a different rate of change for different states or territories. The rebenchmarking has not resulted in any material change to unemployment rates, participation rates or employment to population ratios.

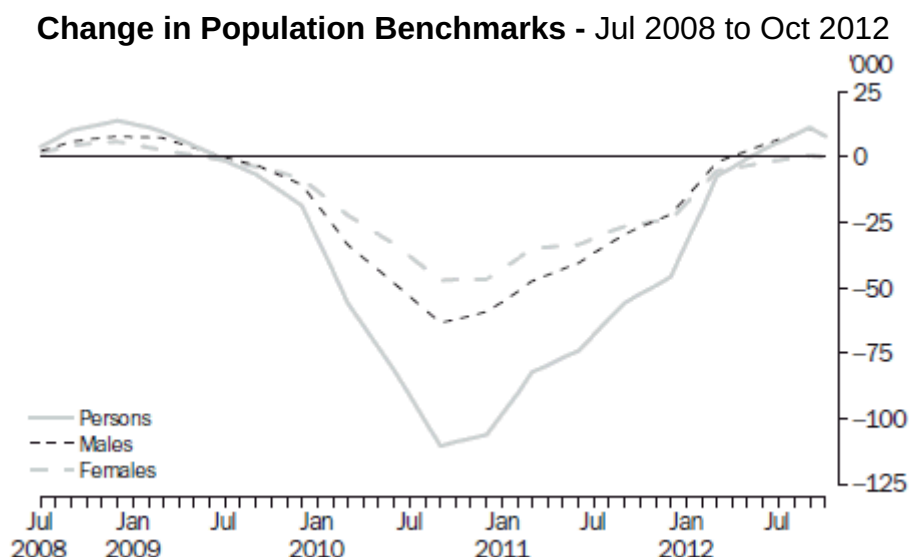
To ensure that the labour force series continue to be coherent with population series, the ABS will undertake regular revisions to population benchmarks into the future to reflect the latest available population estimates.

IMPACT OF REVISED POPULATION BENCHMARKS ON LABOUR FORCE SERIES

Assessment of the impact of the revised population benchmarks on labour force estimates for the period July 2008 to October 2012 showed that the civilian population aged 15 years and over was revised up or down by no more than 0.6% in any month. The average absolute monthly revision to the population benchmark for the period was 39,700 persons, with the largest revision being a decrease of 110,200 persons in September 2010.

The average absolute monthly change in the male population benchmark was 22,700 males with the largest revision being a decrease of 63,200 males in September 2010. The average absolute monthly revision to the female population benchmark was 17,300 females, with the largest revision being a decrease of 46,900 females in September 2010.

Figure 1 below shows revisions to the LFS population benchmarks for males, females and persons for the period July 2008 to October 2012.

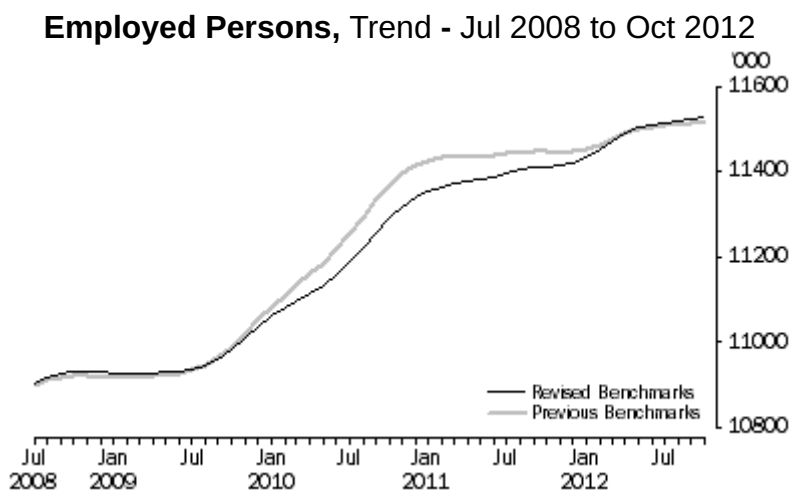


Revisions to the LFS population benchmarks were different across the age groups. The largest change between July 2008 and October 2012 was to those aged 20 to 24 years, with a downward revision of 31,100 persons in December 2010. The following range of monthly revisions was observed:

- 15 to 19 years revised between -13,500 and 1,500 persons;
- 20 to 24 years revised between -31,100 and 4,300 persons;
- 25 to 29 years revised between -30,000 and 5,000 persons;
- 30 to 34 years revised between -12,400 and 1,500 persons;
- 35 to 39 years revised between -5,700 and 3,000 persons;
- 40 to 44 years revised between -7,100 and 4,100 persons;
- 45 to 49 years revised between -800 and 1,700 persons;
- 50 to 54 years revised between -3,000 and 900 persons;
- 55 to 59 years revised between -1,400 and 700 persons;
- 60 to 64 years revised between -2,200 and 3,800 persons;
- 65 to 69 years revised between -4,900 and 600 persons; and
- 70 years and over revised between -7,400 and 200 persons.

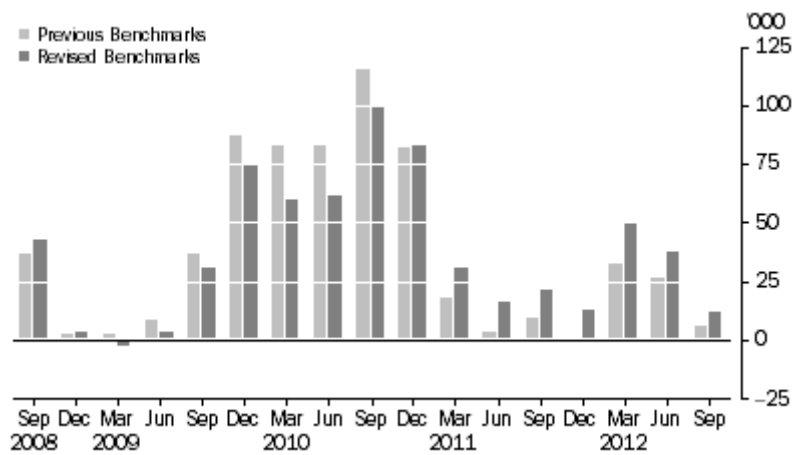
Employed Persons

The main differences to the estimated number of employed persons, in trend terms, as a result of the revisions to LFS population benchmarks, were for 2010 and 2011, with the largest monthly revision being a decrease of 77,100 (0.7%) persons in October 2010. The average absolute monthly change between July 2008 and October 2012 was 28,100 persons (0.2%).



The change to the population benchmarks had an impact on estimated employment growth between July 2008 and October 2012. The largest difference in trend quarterly employment growth was a downward revision of 22,600 in the March quarter 2010, and the largest upward revision of 17,200 in the March quarter 2012. For trend year-to-year employment growth, employment growth in 2010 has been revised down to 303,200 persons from 362,300, while 2011 employment growth has been revised up to 81,900 persons from 30,600. In percentage growth terms, 2010 has been revised down 0.5 pts to 2.7% (previously 3.3%) and 2011 has been revised up from 0.3% to 0.7%.

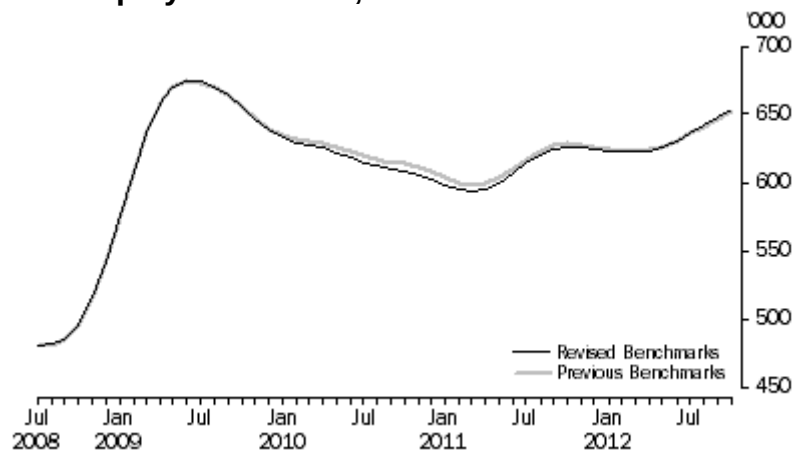
Quarterly employment growth, Trend - Sept qtr 2008 to Sept qtr 2012



Unemployed Persons

The impact of revised population benchmarks on estimated unemployed persons was minimal. In trend terms, estimates of unemployed persons were revised by an average absolute monthly change of 2,000 (0.3%). The largest revision to the unemployed persons estimates was a decrease of 5,400 (0.9%) in October 2010.

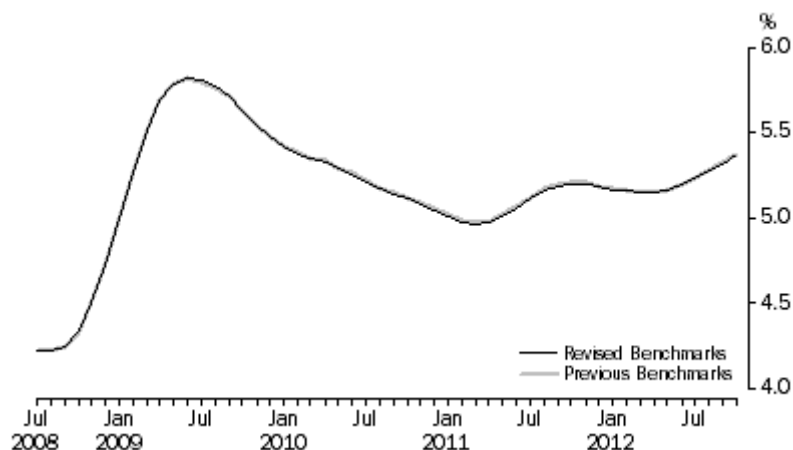
Unemployed Persons, Trend - Jul 2008 to Oct 2012



Unemployment Rate

The unemployment rate in trend terms was not revised by any discernible amount between July 2008 and October 2012. The largest revision to the unemployment rate was a decrease of 0.01 percentage points in October 2010.

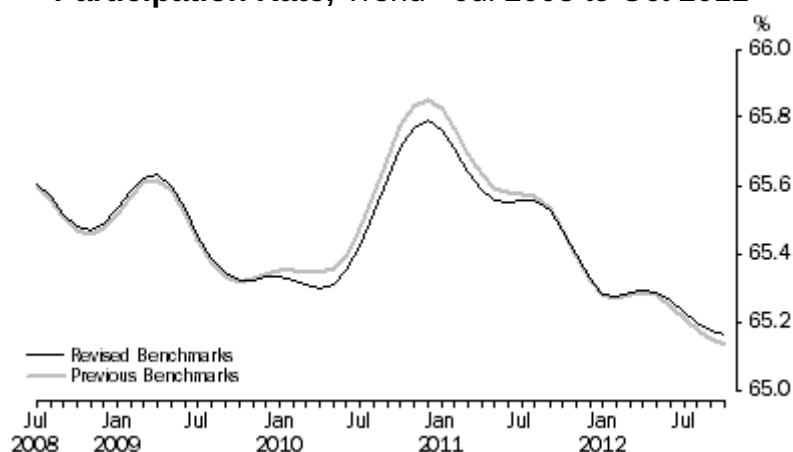
Unemployment Rate, Trend - Jul 2008 to Oct 2012



Participation Rate

The impact on the participation rate was relatively minor. In trend terms, the participation rate was revised by an average absolute monthly change of 0.02 percentage points. The largest revision to the participation rate was a decrease of 0.06 percentage points in November 2010.

Participation Rate, Trend - Jul 2008 to Oct 2012



CALCULATION OF THE REVISED POPULATION BENCHMARKS

The revised LFS population benchmarks for the period July 2008 to October 2012, together with the November 2012 benchmark, were derived as a series based on 2006 Census-based population estimates, using the latest available estimates of growth for net overseas migration, net interstate migration and natural increase. The LFS population benchmarks are initially derived as a quarterly series, as the components of population growth are only available quarterly. As monthly benchmarks are required for the LFS, monthly benchmarks are modelled from the quarterly benchmarks using linear interpolation.

In this latest revision of the LFS population benchmarks, the benchmarks were not revised prior to July 2008, as the rebenchmarking undertaken in July 2010 incorporated the latest final estimates of population growth. The following table shows the status of each of the components of growth for the period since July 2008.

Table 1. Components of population growth (a)

	Natural increase (births - deaths)	Net overseas migration	Net interstate migration
Jul 2008 to Dec 2010	Revised - based on date of occurrence	Final - based on modelled traveller behaviour	Preliminary - model expansion factors based on 2006 Census
Jan 2011 to Jun 2011	Revised - based on date of occurrence	Preliminary - based on modelled traveller behaviour	Preliminary - model expansion factors based on 2006 Census
Jul 2011 to Mar 2012	Preliminary - based on date of registration	Preliminary - based on modelled traveller behaviour	Preliminary - model expansion factors based on 2006 Census
Apr 2012 to Dec 2012	Projections based on corresponding quarters of previous year	Latest forecasts from DIAC(b)	Projections based on corresponding quarters of previous year

(a) Refer to the explanatory notes of the ABS publication **Australian Demographic Statistics** (cat. no. 3101.0) for more details on the methods used to estimate components of population change.

(b) Forecasts published in September 2012 by the Department of Immigration and Citizenship (DIAC) in **The Outlook for Net Overseas Migration, June 2012**.

For this latest revision the ABS used a method to produce LFS benchmarks that simply projects forward 9 months past the most recent preliminary ERP estimate to the current period. This projection incorporates net overseas migration forecasts provided by the Department of Immigration and Citizenship (DIAC).

FUTURE REVISIONS PROCESS FOR POPULATION BENCHMARKS

To ensure that labour force series maintain coherence with the latest population estimates into the future, the ABS will move to a process of regular revisions of the LFS population benchmarks. In 2013, the ABS will undertake two revisions to the population benchmarks at six monthly intervals. In early 2014, the LFS population benchmarks will be revised to take account of the 2011 Census based ERP. Following this, the ABS will make revision to the LFS population benchmarks on a quarterly basis. The following table shows the timing of future revisions and the period of LFS estimates affected by each revision. Note that, for each revision undertaken, the revision period will comprise all months for which population benchmarks could be updated with the most recent ERP information available.

Table 2. Timing and extent of future LFS rebenchmarking

Date of publication of rebenchmarked series(a)	Period of LFS revisions	No. of months revised
May 2013	Jan 2011 to Mar 2013	27
Nov 2013	Jul 2011 to Sep 2013	27
Feb 2014	Aligned with final 2011 Census rebased ERP	To be advised(b)
May 2014	Apr 2012 to Mar 2014	24
Aug 2014	Jul 2012 to Jun 2014	24
Nov 2014	Oct 2012 to Sep 2014	24
Continuing quarterly	Previous 8 quarters	24

(a) In the previous month's issue of **Labour Force, Australia** (cat. no. 6202.0) - i.e. the April 2013 issue is published in May 2013

(b) Extent of revisions of ERP associated with final 2011 Census rebasing will be announced in **Australian Demographic Statistics** (cat. no. 3101.0) on 18 December 2012 and revisions to LFS will align with revisions applied to ERP.

With the introduction of regular benchmarking, future LFS estimates will use the same method used to produce the LFS benchmarks for this revision, that is to project forward 9 months past the most recent preliminary ERP estimate to the current period and incorporating net overseas migration forecasts provided by DIAC([footnote 1](#)). For information on the previous methodology of producing LFS population benchmarks see the feature article '**Population Benchmarks and Labour Force Survey**' in the April 2012 issue of **Labour Force, Australia** (cat. no. 6202.0).

Final 2011 Census Rebasing of Estimated Resident Population (ERP)

The preliminary rebasing of population estimates to the 2011 Census caused Australia's population estimate for June 2011 to be revised down by 294,400. A significant component of this "intercensal error" was due to improvements in the ABS Census Post Enumeration Survey, which resulted in more accurate population estimates from the 2011 Census compared with previous Censuses. In order to maintain coherence between measurements of growth and Census-based population counts, the ABS is considering revisions to the historical ERP series beyond the regular revision of five years to the last Census. See the December quarter 2011 and March quarter 2012 issues of **Australian Demographic Statistics** (cat. no. 3101.0) for further information.

The extent of the revisions of historical ERP using the final 2011 Census based ERP will be announced on 18 December 2012 in the June quarter 2012 edition of **Australian Demographic Statistics** (cat. no. 3101.0). Labour force estimates will be revised for the same historical time period as will be applied to ERP.

LFS estimates rebenchmarked to the final 2011 Census based population estimates, including all historical revisions, will be released in February 2014. Prior to February 2014, LFS estimates will continue to be benchmarked to 2006 Census based population estimates.

FURTHER INFORMATION

For any queries regarding the implementation of any of these changes to the LFS, contact Labour Force Estimates on Canberra 02 6252 6525, or via email at labourforce@abs.gov.au

¹ Aside for March quarter 2013 and September quarter 2013, which will project 12 months past the most recent preliminary ERP estimate.

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